

FIG.1

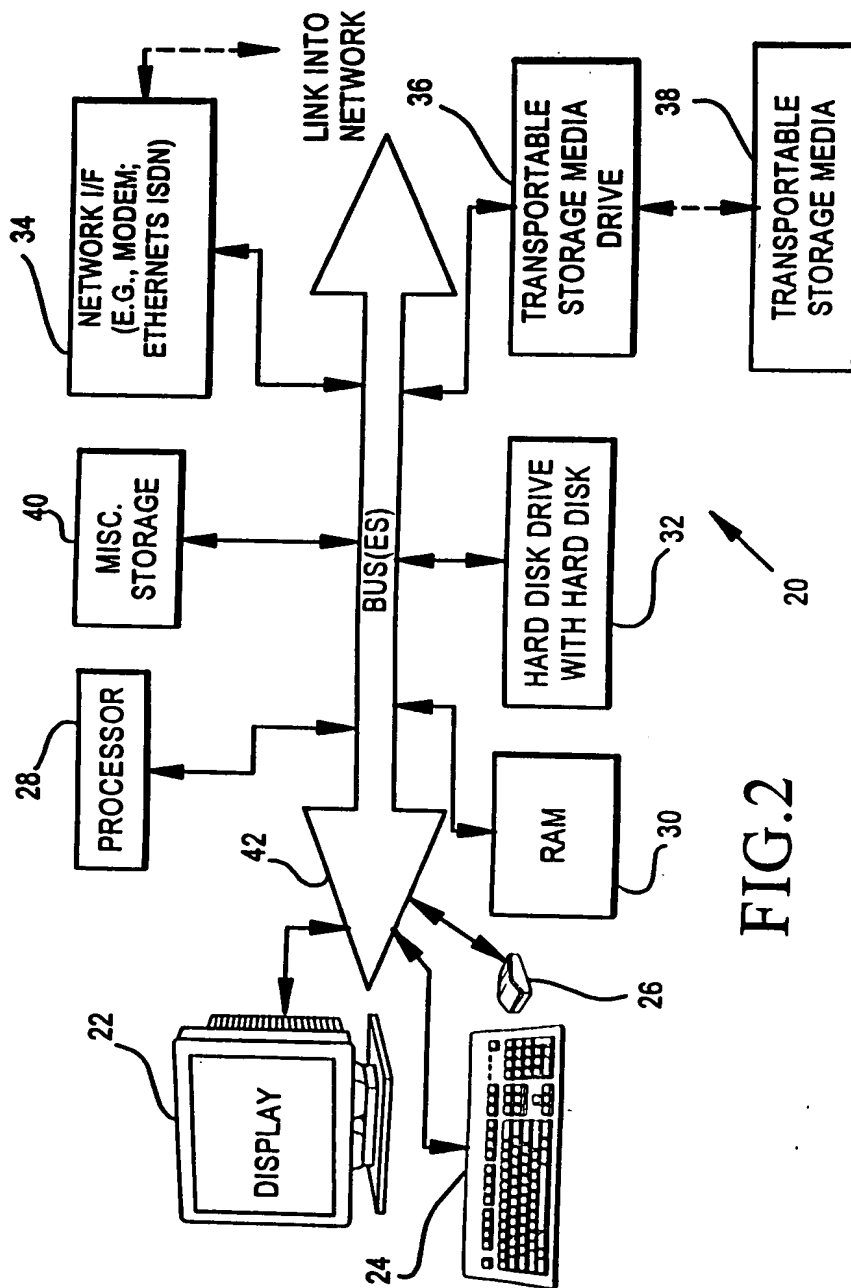


FIG. 2

FIG. 3

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graph TD
    Start([START]) --> 72[LOAD IN VIDEO SEQUENCE]
    72 --> 74[DISPLAY CURRENT IMAGE FRAME]
    74 --> 76[SELECT OBJECT SEGMENTATION PLUG-IN]
    76 --> 78[CALCULATE EDGE ENERGY IMAGE]
    78 --> 80[WAIT FOR OPERATOR INPUT]
    80 --> 82[RESPOND TO OPERATOR INPUT]
    82 --> CASE((CASE))
    CASE --> 84[NEW CONTROL POINT]
    CASE --> 86[MOVE CONTROL POINT]
    CASE --> 88[INSERT CONTROL POINT TO CLOSED CONTOUR]
    CASE --> 90[SAVE OBJECT BOUNDARY]
    84 --> 92[IF NOT FIRST PT., THEN FIND BEST PATH FROM PRIOR CONTROL POINT TO CURRENTLY SELECTED CONTROL POINT]
    92 --> 94[REDETERMINE BEST PATHS BETWEEN SELECTED CONTROL POINT (AT ITS NEW LOCATION) AND THE ADJACENT CONTROL POINT(S) TO EACH SIDE]
    94 --> 96[IDENTIFY TWO CONNECTED CONTROL POINTS NEAREST TO INSERTION PT. WHERE INSERTION PT. IS BETWEEN THE TWO]
    96 --> 98[DELETE PATH BETWEEN THE TWO CONNECTED CONTROL POINTS]
    98 --> 100[FIND BEST PATH FROM ONE CONTROL PT. TO INSERTED CONTROL POINT & FROM INSERTED CTL. PT. TO OTHER CTL. POINT]
    94 --> 96
    94 --> 100
    96 --> 100
    98 --> 100
    100 --> 78
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The flowchart illustrates the process of object segmentation. It begins with a 'START' terminal, followed by a sequence of steps: 'LOAD IN VIDEO SEQUENCE' (72), 'DISPLAY CURRENT IMAGE FRAME' (74), and 'SELECT OBJECT SEGMENTATION PLUG-IN' (76). The process then enters a loop starting with 'CALCULATE EDGE ENERGY IMAGE' (78), followed by 'WAIT FOR OPERATOR INPUT' (80) and 'RESPOND TO OPERATOR INPUT' (82). A 'CASE' decision point follows, leading to four main branches: 'NEW CONTROL POINT' (84), 'MOVE CONTROL POINT' (86), 'INSERT CONTROL POINT TO CLOSED CONTOUR' (88), and 'SAVE OBJECT BOUNDARY' (90). The 'NEW CONTROL POINT' branch leads to a decision 'IF NOT FIRST PT., THEN FIND BEST PATH FROM PRIOR CONTROL POINT TO CURRENTLY SELECTED CONTROL POINT' (92), which then leads to 'REDETERMINE BEST PATHS BETWEEN SELECTED CONTROL POINT (AT ITS NEW LOCATION) AND THE ADJACENT CONTROL POINT(S) TO EACH SIDE' (94). The 'MOVE CONTROL POINT' branch also leads to step 94. The 'INSERT CONTROL POINT TO CLOSED CONTOUR' branch leads to 'IDENTIFY TWO CONNECTED CONTROL POINTS NEAREST TO INSERTION PT. WHERE INSERTION PT. IS BETWEEN THE TWO' (96), which then leads to 'DELETE PATH BETWEEN THE TWO CONNECTED CONTROL POINTS' (98). Both the 'REDETERMINE' and 'DELETE PATH' steps lead to 'FIND BEST PATH FROM ONE CONTROL PT. TO INSERTED CONTROL POINT & FROM INSERTED CTL. PT. TO OTHER CTL. POINT' (100). The 'SAVE OBJECT BOUNDARY' branch leads to 'STORE OBJECT BOUNDARY, INCLUDING CONTROL POINTS AND OTHER EDGE POINTS FORMING THE CLOSED CONTOUR'. The final output of the process is a return to the 'CALCULATE EDGE ENERGY IMAGE' step (78).

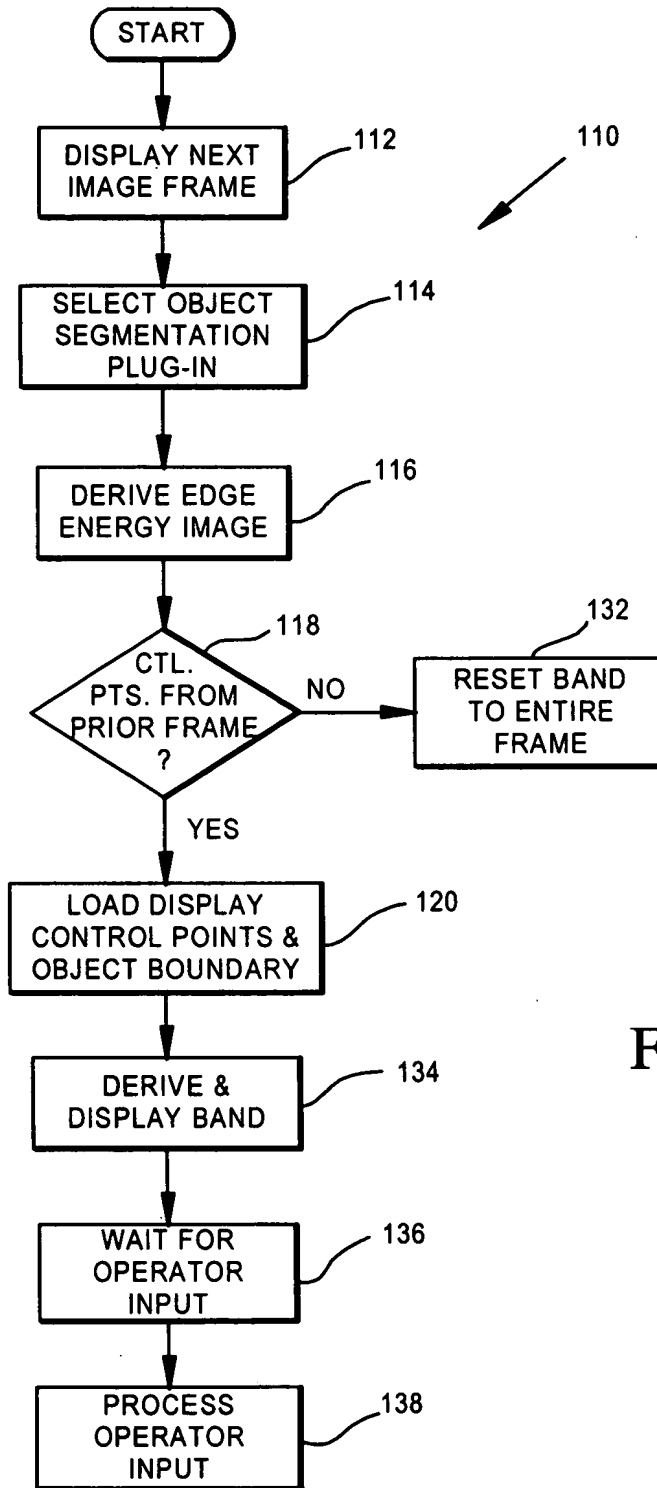


FIG.4

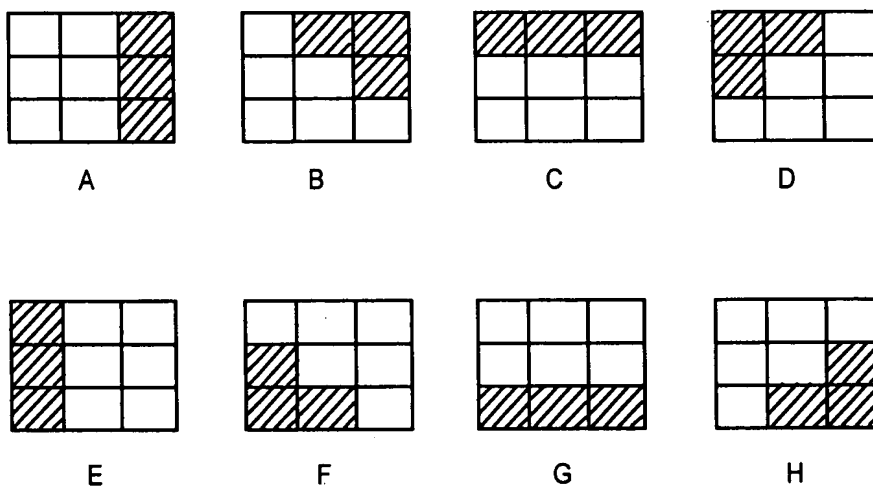
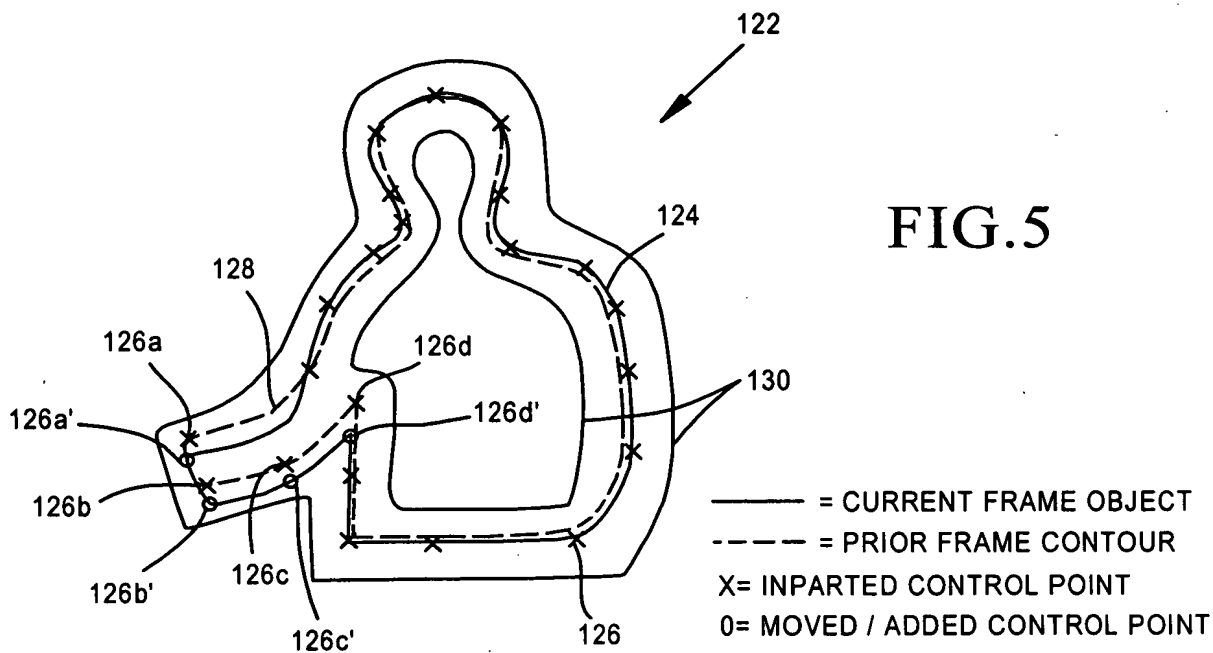


FIG. 6